

REMARKS

Reconsideration and withdrawal of the rejections of the claimed invention is respectfully requested in view of the amendments, remarks and enclosures herewith, which place the application in condition for allowance.

I. STATUS OF CLAIMS AND FORMAL MATTERS

Claims 1-31 are now pending in this application. An additional element has been added to claim 11; all remaining amendments were to correct minor typographical or grammatical errors. No new matter has been added by this amendment.

It is submitted that the claims, herewith and as originally presented, are patentably distinct over the prior art cited in the Office Action, and that these claims were in full compliance with the requirements of 35 U.S.C. § 112. The amendments of the claims, as presented herein, are not made for purposes of patentability within the meaning of 35 U.S.C. §§§§ 101, 102, 103 or 112. Rather, these amendments and additions are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

II. THE 35 U.S.C. 103(a) REJECTION HAS BEEN OVERCOME

Claims 1-10, 15-20 and 22-25 were rejected as allegedly being anticipated by GB 1,551,587 (“Colgate”) in view of Sugamoto et al. (JP 10183200 – “Sugamoto”), Mabley (U.S. Patent 2,356,168), and *Chemical and Technological Assessment 61st JECFA*. The applicants request reconsideration of this rejection for the following reasons.

NOTE: It is presumed that GB 1,551,587 was intended as the reference cited, NOT GB 1,551,578 (Applicants have brought this to the Examiner’s attention after each of Office Action, but this still has not been corrected).

The primary basis for maintaining the rejection in the final rejection was that the gelatin is being read as being a natural polymer. As both the present claims and the claims submitted in the after final response of 20 May 2008 did not include gelatin as a film- or backbone-forming polymer, this portion of the rejection has been overcome. The Advisory Action further explained that “Colgate-Palmolive does indeed inherently possess backbone forming film with the identical ingredients of instant claim such as methyl cellulose...starch...and propylene glycol.” While the applicants disagree that inherency has been established, in order to advance prosecution, the

applicants have amended the scope of the film- or backbone-forming polymer to exclude starch, cellulose and cellulose derivatives (the reference to propylene glycol in the Advisory Action was not well understood as the amendment to the claims presented never encompasses this as an element).

Therefore, Colgate does not teach all elements of the applicants claimed invention as amended and does not anticipate applicants' claims 11 and 14.^{1,2}

Claims 11-14 and 21 were rejected as allegedly being anticipated by GB 1,551,587 ("Colgate") in view of Sugamoto et al. (JP 10183200 – "Sugamoto") and Schulerud (U.S. Patent 2,525,081). The applicants request reconsideration of this rejection for the following reasons.

Claims 26, 28 and 29 were rejected as allegedly being anticipated by GB 1,551,587 ("Colgate") in view of Sugamoto et al. (JP 10183200 – "Sugamoto") and Fowler et al. (U.S. Patent 5,720,961 – "Fowler"). The applicants request reconsideration of this rejection for the following reasons.

IV. THE 35 U.S.C. 103(a) REJECTION HAS BEEN OVERCOME

A. Claims 1-10, 15-20 and 22-25 were rejected as allegedly being obvious by GB 1,551,587 ("Colgate") in view of Sugamoto et al. (JP 10-183200), Mabley (US 2,356,158) and Saxena, *Chemical and Technological Assessment 61st JEFCA* (Polyvinyl Alcohol).

1. Background

¹ In order to preserve the issue for appeal, the applicants also incorporate by reference the arguments from the amendment after final rejection dated 20 May 2008 as the office action did not establish inherency or establish that all of the elements in Colgate described the identical invention, i.e. finding the requisite elements is not sufficient to establish anticipation if the prior art reference does not show how to combine the elements to describe the applicants' invention.

² The applicants would also like to clarify two errors in the Office Action regarding the nature of propylene glycol and gelatin. First, **propylene glycol** does not inherently have backbone forming properties, i.e. propylene glycol is a faintly sweet, odorless and colorless clear liquid which is hygroscopic and miscible with water, acetone and chloroform and is not a film- or backbone-forming polymer. Second, the characterization of gelatin as a "cellulose derivative substance" is also in error, i.e. **gelatin** is a translucent, colorless, brittle, nearly tasteless solid substance extracted from the collagen inside animals' connective tissue and is an irreversibly hydrolyzed form of collagen and as such does NOT belong to the polysaccharide family of chemicals.

When applying 35 U.S.C. 103, consideration of the applicants claims and the prior art references cited must be considered as a whole. *See MPEP 2141.02.*

In order to establish *prima facie* obviousness, all claim limitations must be taught. *See MPEP 2143.03.* Although there is no set number of difference which must be accounted for or set number of references which must can be used to establish a case for obviousness, generally, the greater the number of differences, the lesser the indicia of obviousness. In addition, if relying upon an “obvious to try” rationale, the skilled artisan must be choosing from a finite number of identified, predictable solutions with a reasonable expectation of success.

These parameters for establishing obviousness have not been established for the reasons which follow.

2. When considered as a whole, Colgate does not teach several elements of the applicants’ claimed soap preparations

The Office Action correlates several sections of the Colgate reference to the applicants’ claim language. However, these written text of the Office Action was not taken from the prior art reference themselves. As such, the applicants present that these characterization of the teachings of Colgate are in error and fail to consider the teachings of Colgate as a whole.

- (a) “Colgate-Palmolive discloses a detergent bar (intended for conventional uses), which has a backbone forming polymer (film: **starch**; [pg. 11, L42], **cellulose derivatives**; [Pg. 15, L17]), air bubbles and it is solid; [Pg. 1, L. 5-25, Pg. 10, L.19]” (page 2, third to last line to page 3, line 1)

The reference to “starch” and “cellulose derivatives” as being part of the backbone forming polymer is not well understood as claims 1-10, 15-20 and 22-25 require the presence of “at least one film- or backbone-forming polymer selected from the group consisting of *polyamides, polyacrylates, polyamino acids, polyvinyl acetate, polyvinyl alcohol, polyethylene glycols, polyvinylpyrrolidones, pullulan, alginic acid and mixtures thereof.*” Therefore, the backbone forming polymers of Colgate is different from the film- or backbone-forming polymers of 1-10, 15-20 and 22-25.

The reliance on Saxena in combination with Colgate only applies to claim 5 and the specific reference to the use of polyvinyl alcohol in claim 5 and would not apply to claims 1-4, 6-10, 15-19 and 22-25.

Furthermore, the combination of Saxena with Colgate is not even relevant as applied to claims 5 and 20. Consideration of a prior art reference as a whole includes consideration of the entire reference, not just the isolated teaching in attempt to support an obviousness rejection. *See MPEP 2141.02, section VI.*

Saxena is a generic monograph regarding polyvinyl alcohol and what little guidance that is provided about its intended use is directed toward use as a ***“moisture barrier film for food supplement tablets and for foods that contain inclusions or dry food with inclusions that need to be protected from moisture uptake.”*** (page 1, “Summary” section of Saxena); further references to use in food products are found throughout Saxena.

One of ordinary skill in the art would find this to be non-analogous art with respect to both the applicants’ claimed solid soap preparation and the detergent bars of Colgate. *See MPEP 2141.01(a).* As such, there is no teaching or suggestion from either Saxena or Colgate or from within the general knowledge of those of skill in the art to use polyvinyl alcohol in the detergent bars taught by Colgate.

As Mabley and Sugamoto do not address these differences for the detergent bars of Colgate, claims 1-10, 15-20 and 22-25 are unobvious over the combination of Colgate, Sugamoto, Mabley and Saxena for these reasons alone.

As previously noted, air bubbles for the type of soap preparation taught by the applicants is nowhere to be found in the passage within Colgate and consideration of the Colgate reference as a whole shows that ***gelatin is specific requirement for Colgate’s detergent bar*** and that depending on the nature of the synthetic organic detergent, a cross-linking agent is necessary.

Sugamoto is alleged to be analogous art and is relied upon in part to show the applicability of polyvinyl alcohol to the detergent bars of Colgate.³ However, in addition to the fact that Sugamoto does not teach air bubbles, this allegation is clearly incompatible with the teaching of Colgate where the air bubbles are formed within the gelatin backbone of Colgate. It has long been held that “[i]f the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); *see also MPEP 2141.01, section V*.

The procedure for forming this backbone in Colgate is described in detail on page 7:

The manufacture of the present elastic detergent bars is comparatively simple, often requiring only the **mixing together of the components under such conditions that the gelatin will form a satisfactory gel with water** and/or with any other solvents and other components present.

For example, all the components of a particular detergent bar composition, including synthetic detergent, gelatin, water, cross-linking agent and/or curing agent, when present, and pluralhydric alcohol, when present, may be **mixed together and heated, with stirring, to dissolve the gelatin**. Alternatively, the gelatin may first be dissolved in water and the other components may then be admixed or other operative mixing sequences may be adopted.

If the components are soluble the product may be transparent or at least translucent but if insoluble ingredients are employed, which may be done intentionally, an opaque gel may result. To clarify transparent gels and to increase the strengths and densities thereof these may be deaerated or degassed under vacuum or by allowing the hot or warm liquid to stand until it becomes clarified.

Alternatively, **air or other suitable gas may be distributed throughout the gel before solidification thereof**. The solution or dispersion may then be poured into suitable moulds, **chilled and thereby solidified**. Gelatin dissolves at temperatures above 40 to 45°C. but it is normally undesirable to heat it to a temperature above 100°C. and preferably dissolving will take place at a temperature in the range of 50 to 90 or 95°C., more preferably 60 to 80°C. and over a period of from 3 to 30 minutes. Moulds will usually be at a temperature of from 5 to 20°C., preferably 5 to 15°C. **After the gelatin has completely set**, which may take from about one minute to one hour, usually taking

³ With regard to the assertion that Colgate-Palmolive and Sugimoto represents analogous art because they are both directed towards “cleansing compositions” (and to other assertions of analogy on this basis) does not reflect a consideration of the respective inventions as a whole, i.e. virtually any set of references can be held to be analogous if there was no context placed on the type of relationship (e.g., from the characterization within the Office Action, water would be considered to be analogous art; put another way, when freed from providing any context for asserting analogy, one could assert analogous art by the fact that Colgate-Palmolive and Sugimoto both use chemical compounds in their compositions). Analogy is not established merely because some type of commonality can be asserted in hindsight.

from three to ten minutes, **the elastic detergent bar** or cake **may be removed from the mould** and packed or may be allowed to warm to room temperature before packing, at which temperature it still remains firm, yet elastic.

The first part of the method employed in manufacturing the bars of the third aspect of the invention, those wherein **air or other suitable insoluble gas is dispersed in fine bubbles throughout the bar**, is essentially the same as that immediately previously described and it is also often desirable to utilize heat and vacuum to assist in dissolving the gelatin and also for removing excess moisture and solvent so as to make a firmer product. Additionally, application of the vacuum, such as one of 25 to 250 mm. Hg absolute, removes air bubbles with the moisture so that subsequent addition of very finely divided bubbles can be subject to better control.”

[Emphasis added]

The air bubbles created in the *polyvinyl alcohol* backbone of Sugamoto would destroy the detergent bar of Colgate if substituted or added to the gelatin backbone of Colgate because polyvinyl alcohol is soluble in water (see Saxena, page 1, “Description”) and therefore does not form a gel. In the absence of gelatin, neither the formation of a gel nor the solidification of the gel containing air bubbles distributed therein would occur.

As Mabley does not address the element of air bubbles or the use of polyvinyl alcohol for the detergent bars of Colgate, the combination of Colgate, Sugamoto, Mabley and Saxena do not teach or suggest all of the elements of the applicants’ soap preparation and in fact actively teaches away from such a combination as it would destroy the intended purpose of Colgate’s detergent bar.

- (b) “Colgate-Palmolive does not explicitly teach this soap with the strip or sheet thickness about 100 μm ...”⁴ (page 3, lines 5-6 of Office Action)

Sugamoto was also relied upon to show the alleged obviousness of providing strips or sheets with a thickness of about 100 μm . However, Sugamoto does not teach air bubbles in their

⁴ “...even though it discusses the approximate thickness of the soap; [Pg. 4, L. 15-18]. This passage from Colgate appears to have been misread, i.e. the applicants’ limitation is that the thickness does not exceed **5 MILLimeters**. The passage from Colgate reads “The elastic detergent bars made are sufficiently elastic so that a bar **2 cm [CENTimeters]** thick can be wetted and pressed between thumb and forefinger to a **1 cm [CENTimeters]** thickness and will immediately (at most within five seconds) return to the **2 cm [CENTimeters]** thickness or to at least within about 1 mm thereof, upon pressure release.” The reference to millimeters within Colgate only refers to range of thickness when the pressure is released, i.e. 19 – 21 mm or 1.9 – 2.1 cm. This is well in excess of what is claimed by the applicants.

cleaning sheet and as shown above, even without the requirement of air bubbles, Sugamoto is incompatible for combination with Colgate.

Moreover, Colgate actively teaches away from the lower thickness of Sugamoto's invention in that Colgate clearly refers to detergent bars which achieve "squeezeability" (see page 1, lines 7-11 of Colgate). This property would be lost upon adoption of the thicknesses referred to by Sugamoto. As noted above, there can be no obviousness for the combination of teachings if the result destroys the intended use of the modified product.

Mabley was still referred to in the Office Action because of their teaching of a soap leaf which utilized methyl cellulose and this allegedly could be combined with Colgate because they were in analogous arts. However, as previously noted the applicants' claim 1 now excludes cellulose and cellulose derivatives, Mabley's methylcellulose soap leaves combined with Colgate would not suggest the formation of sheets and strips as in the applicants' soap preparation wherein the film- or backbone-forming polymer is not cellulose or cellulose derivatives.

Even without the amendment, the Mabley reference was unsuitable for combination with Colgate as the former was directed toward a soap leaf containing methylcellulose whereas the latter was directed to a soap bar containing gelatin and which sought to achieve "squeezeability" (see page 1, lines 7-11 of Colgate), i.e. modifying a reference cannot render that reference unsuitable for its intended use. Here, forming soap leaves with methylcellulose defeats the purpose of Colgate's invention which required thicker soap bars to achieve their squeezeability.

Moreover, the Mabley reference was not analogous to Colgate in that Mabley's soap leaves lacked the air bubbles of Colgate, i.e. one of ordinary skill in the art would have expected that the addition of methylcellulose to form the leaf (had there been proper motivation to apply this teaching to Colgate) to form leaf without air bubbles which also defeats the purpose of Colgate's invention to achieve a thicker soap bar with squeezability.

Lastly, Mabley is also non-analogous to Colgate in that the former desire rapid dissolution of their soap leaves (although it is silent with regard to the rate of dissolution) whereas Colgate makes no such reference to such dissolution, in fact the squeezeability directs one of ordinary skill in the art to the formation of soap bars with less rapid dissolution.

- (c) “It is physico-chemically implicit that [dissolution] time is a function of thickness and concentration of ingredients in soap, and water temperature” (page 4, line 11-13 of Office Action)

It is well known that “[o]bviousness cannot be predicated on what is not known at the time an invention is made, even if the inherency of a certain feature is later established. *In re Rijckaert*, 9 F.2d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993), *see also* MPEP 2141.02, section V.

The statement regarding dissolution time improperly attempts to assert obviousness based on an inherency theory as none of the references teach all elements of the applicants’ claimed invention; only by improperly picking and choosing from the isolated elements from the combination of Colgate, Sugamoto, Mabley and Saxena without considering the respective inventions as a whole can an attempt (which is a failed attempt) be made to transform Colgate into something approximating the applicants’ invention. Nothing from these references suggests that the combination of elements would implicitly result in the applicants’ claimed dissolution time.

- (d) “As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the prima facie case of obviousness. *See In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (1980)” (page 5, lines 5-9 of the Office Action)

The statement is generally referred to in MPEP 2144.05, **section II.A.** However, the very next section, i.e. MPEP 2144.05, **section II.B.** states that only result-effective variables which are recognized as such can be optimized. No such recognition was made in any of Colgate, Sugamoto, Mabley and Saxena and the citation to *In re Boesch* actually supports the applicants position.

3. Colgate, Sugamoto, Mabley and Saxena do not represent a finite number of choices for the applicants' combination upon which one of ordinary skill in the art would find the applicants' invention to be obvious

The applicants' claimed invention is directed toward a soap preparation which comprises of several element which must be present *simultaneously*: it must (1) be a solid; (2) in the form of sheets or strips; (3) comprise of a soap, (4) at least one film- or backbone-forming polymer selected from the group consisting of polyamides, polyacrylates, polyamino acids, polyvinyl acetate, polyvinyl alcohol, polyethylene glycols, polyvinylpyrrolidones, pullulan, alginic acid and mixtures thereof, and (5) air bubbles; and (6) wherein the thickness of said solid soap preparation does not exceed 5 mm.

Establishing obviousness is not reduced to an evaluation of whether each individual element is obvious in and of themselves, but whether when considering the prior art references as a whole, the simultaneous combination of elements was obvious. It has previously been held that "[i]t is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." *See In re Wesslau*, 353 F.2d 238, 241, 147 USPQ 391, 393 (CCPA 1965))

The revision of the obviousness rejection to include more references actually is a further indicia that the applicants' invention is non-obvious rather than obvious, as each reference must be considered in its entirety, i.e. the Office Action buys the entire content of the references relied upon including non-essential matter and teachings away from the applicants' claimed invention not just an isolated element relied upon to formulate the rejection.

One of ordinary skill in the art when confronted with four references would not have found the applicants claimed invention with the simultaneous combination of at least six

different elements to have represented a finite number of solution from the virtually infinite number of elements and possible combinations from Colgate, Sugamoto, Mabley and Saxena.

B. Claims 11-14 and 21 were rejected as allegedly being obvious by GB 1,551,587 (“Colgate”) in view of Sugamoto et al. (JP 10-183200) as applied to claim 1 and further in view of Schulerud (U.S. Patent 2,525,081). The applicants request reconsideration of this rejection for the following reasons.

As claims 11-14 and 21 are all directly or indirectly dependent on claim 1, the applicants response above is incorporated by reference here.

The applicants further note that the applicants’ process and that of Colgate can be compared as follows:

Colgate Palmolive	present invention
mixing gelatin and all other components with water to form a gel	formation of an aqueous mixture of soap, water and polymer
distribution of air in the gel	stirring of the aqueous mixture in teh presence of air to form a foam
solidification of the gel by “setting”	solidification of the foam by water removal in a drying tunnel

The difference is that according to Colgate Palmolive a “gel” has to be formed, while according to the present invention a “foam” is prepared.

Consequently, the step of solidification is different. The “gel” of Colgate Palmolive is chilled and thereby solidifies. The water content remains essentially unchanged. The “foam” of the present invention is dried. The water content is reduced and the foam thereby solidifies.

Thus, the combination of Colgate Palmolive and Sugamoto would not lead to the claimed process because of the different process steps of Colgate Palmolive and the absence of air bubbles in Sugamoto’s films.

In addition, Schulerud (US 2,525,081) discloses a process of making a floating soap in a chamber wherein the soap mass is worked in shear and compression; see claim 1. While these forces would not change the structure of a floating mass having a moisture content of about 15% to 30%, the **solid** soap preparation in the form of sheets or strips comprising air bubbles would be destroyed. See the description of the property concerning resistency against forces in para [0012] of US 2006/0052263 A1.

Therefore, the combination of Colgate, Sugamoto and Schulerud does not establish a prima facie case of obviousness because all elements of the claimed process are not taught and there is teaching away from the applicants' process as the conditions of Sugamoto and Schulerud would destroy the intended product produced in Colgate's process.

C. Claims 26-29 were rejected as allegedly being obvious by GB 1,551,587 ("Colgate") in view of Sugamoto et al. (JP 10-183200) as applied to claims 1 and 5 and further in view of Fowler et al. (U.S. Patent 5,720,961 – "Fowler"). The applicants request reconsideration of this rejection for the following reasons.

As claims 26-29 are directly dependent upon either of claims 1 or 5 and Fowler does not address the deficiencies of the rejection of claims 1 or 5, the applicants' arguments made above are incorporated by reference here.

CONCLUSION

In view of the remarks and amendments herewith, the application is believed to be in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly solicited. The undersigned looks forward to hearing favorably from the Examiner at an early date, and, the Examiner is invited to telephonically contact the undersigned to advance prosecution.

Respectfully submitted,
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